

Suicide attempts: epidemiological and clinical characteristics

Descriptive study carried out from the EPH of Ouargla 2020-2021

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Keywords

Epidemiological features;
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Abstract

Suicide attempts are one of the main reasons for hospitalization in medical surgical emergencies. The purpose of our work was to determine the epidemiological and clinical characteristics of patients admitted to medical-surgical emergencies for attempted suicide.

We report a descriptive study of 44 cases of attempted suicide admitted to the medico-surgical emergency department of the public hospital Mohamed BOUDIAF Ouargla, during 12 months. The main diagnosis, of the patients included, was a suicide attempt by voluntary intoxication or autolysis.

In this study, the female sex was most represented (59%) with sex-ratio = 0,69. The age group of 16 to 21 was the most represented (32%). The majority of suicides have a low level of instruction (average with a 43 %), 77 % are unemployed and 61 % of singles. The majority of suicidal resided in an urban area, 18% have particular organic affection and 27% have special psychopathological affection. 45% of suicides have special toxic habits (32% tobacco, 23% psychotropics). 68 % of patients have an exposure to other suicide in the entourage, the ingestion of the caustic was the most used autolysis means at 30 % followed by the '32% drug poisoning. The impulsiveness and the problems of the couple represent the causes of the most found act in 28 % of cases for each. 59% of suicides make TS for the first time and 41% are ≥ 2 times. 64% of suicides have persistent suicidal ideas and that 66% of patients regret their suicidal gesture.

The results of our study only reinforce the importance of researching them predictive and precipitating risk factors for suicidal behavior and this, in order to allow prevention, early diagnosis and adaptive management to improve symptomatology, avoid complications and maximally prevent risk from the passage to the self-lytic act.

محاولات الانتحار: الخصائص الوبائية والسريية دراسة وصفية في المؤسسة الصحية بورقلة خلال 2021/2020

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الكلمات المفتاحية	الملخص
الخصائص الوبائية؛ محاولة الانتحار؛ ابتلاع المواد الكاوية؛ عوامل الخطر؛ المستشفى العمومي محمد بوضياف ورقلة.	<p>محاولات الانتحار هي أحد الأسباب الرئيسية لدخول المستشفى في حالات الطوارئ الجراحية الطبية. يعتبر الغرض من عملنا هذا هو تحديد الخصائص الوبائية والسريية للمرضى الذين تم إدخالهم إلى حالات الطوارئ الطبية الجراحية لمحاولة الانتحار.</p> <p>المنهج: تعتمد هذه الدراسة على المنهج الوصفي من خلال اخذ عينة متكونة من 44 حالة مرت على تجربة محاولة انتحار حيث تم إدخالها إلى قسم الطوارئ الطبية الجراحية في المستشفى العمومي محمد بوضياف ورقلة، خلال 12 شهرا. حيث كان التشخيص الرئيسي، للمرضى هو محاولة الانتحار العمدي عن طريق التسمم الطوعي أو الايذاء الذاتي العمدي.</p> <p>في هذه الدراسة، توصلنا ان الجنس الأنثوي أكثر تمثيلا (59٪) مع نسبة الجنس = 0.69. وان الفئة العمرية من 16 إلى 21 سنة هي الأكثر تمثيلا (32٪). في حين ان غالبية محاولي الانتحار لديهم مستوى تعليمي منخفض (المتوسط ب 43 ٪)، 77 ٪ من العاطلين عن العمل و 61 ٪ من العزاب. ومن جهة أخرى غالبية محاولي الانتحار يقيمون في مناطق حضرية، كما ان 18 ٪ لديهم سوابق مرضية عضوية وان 27 ٪ لديهم سوابق مرضية نفسية. 45 ٪ من محاولي الانتحار لهم عادات سامة أي (32 ٪ يستهلكون التبغ، 23 ٪ المؤثرات العقلية). و 68 ٪ من المرضى لديهم سوابق داخل بيئتهم لمحاولات الانتحار، ولاحظنا ان أكثر طرق الانتحار استخداما في هذه الدراسة هو ابتلاع المواد الكاوية بنسبة 30 ٪ تليها 32 ٪ التسمم بالأدوية. كما يمثل الاندفاع ومشاكل الزوجين من الأسباب الأكثر شيوعا في الانتحار بنسبة 28 ٪ لكل منهما. 59 ٪ من محاولات الانتحار المسجلة هي لأول مرة و 41 ٪ لمرتين أو أكثر. 64 ٪ من محاولي الانتحار ماتزال لديها أفكار انتحارية وأن 66 ٪ من المرضى ندموا على هذا الفعل الانتحاري.</p> <p>تعزز نتائج دراستنا أهمية البحث عن عوامل الخطر التنوئية والمعجلة او الاستباقية للسلوك الانتحاري وهذا، من أجل السماح للوقاية والتشخيص المبكر والإدارة التكيفية لتحسين الأعراض وتجنب المضاعفات ومنع المخاطر إلى أقصى حد من المرور من فكرة محاولة الانتحار إلى الانتحار الفعلي.</p>

1- Introduction

Suicide is a phenomenon that has long aroused the interest of researchers, which cannot be approached from a medical point of view alone given the complexity of this phenomenon.

Other approaches, anthropological, theological, historical, philosophical, sociological... were interested in the suicidal phenomenon.

Suicide is "the deliberate act of ending one's own life." In addition to being a personal tragedy, it is also a serious public health issue. The frequency of suicide and suicide attempts continues to increase worldwide. The passage to the suicidal act corresponds to a moment of crisis for the subject, existential crisis, psychosocial crisis, psychiatric crisis [1] (OMS, 2021). Consider the World Health Organization's (WHO) definition of a suicide attempt: "Any deliberate act, without fatal outcome, aimed at committing an act of violence against one's own person or ingesting a toxic substance or medication in a dose higher than the therapeutic dose. This act must be unusual. Addictive behaviours are therefore excluded, as well as repeated self-mutilation and refusal to eat."

2- DEFINITIONS

2-1- Suicide is the act of taking one's own life by a voluntary act. [2] (Tousignant.M, 1994)

2-2- Suicide attempt (SW) is defined as any intentional act done by a person for the purpose of suicide that does not result in death. [3] (Tousignant, 2004)

2-3- The suicidal person is the individual who attempted suicide and survived the suicidal act, the suicidal person is the subject whose act led to his or her death. [4] (*Les aspects épidémiologiques du suicide à dakar*, pp. 10-15)

2-4- Suicidal ideation corresponds to the idea of ending one's life, which is more or less intense and elaborate, to a feeling of weariness of living, to the conviction that life is not worth living. [5] (*Rapport mondial sur la violence et la santé*, p. 02)

2-5- suicidal crisis is a psychological crisis, the major risk of which is suicide. The concept of suicidal crisis includes different aspects ranging from suicidal thoughts to acting out. [6] (Walter M)

2-6- Suicidal equivalents are risky behaviours, which reflect an unconscious wish for death. These behaviours can include mutilation, heavy drinking, risky sexual behaviour, high-speed driving, drug addiction or even some refusal of care during serious illnesses.

2-7- Suicidal behaviour is associated with a real process that can include the search for solutions, then suicidal ideation which, when frozen, leads to suicidal scenarios. [7] (Romano, 2013)



2-8- The suicidal threat corresponds to the manifestation of a project, expressed verbally or not. It lies somewhere between suicidal ideation and acting out. [8] (Boughazi, 2015)

2-9- Suicidal behaviour refers to a set of behaviour's, ranging from suicidal ideation to suicide planning, suicide attempt, and suicide. [9] (research gate)

3- Epidemiology:

Every year, nearly 703,000 people [10] (OMS, Organisation mondiale de la santé, 2021) commit suicide and many more attempt suicide. Suicide is the 4th leading cause of death among 15–19-year-olds worldwide in 2019[11], with 77% of suicides occurring in low- and middle-income countries.

Algeria is no exception to this phenomenon, which is said to be taking on worrying proportions, according to statistics declared by various organizations, indicating that Algeria is among the countries with an average suicide rate. The national average prevalence of suicides is estimated to be 2 to 4 suicides per 100,000 population, increasing from 0.94 in 1999 to 2.25 per 100,000 inhabitants in 2003 [12] (Meriem, 2005). An analysis of mortality data from (2000 to 2012) shows that about 1,000 Algerians on average commit suicide each year, and 5,000 suicide attempts per year.

In the period from 1 January 2011 to May 2012 alone, according to a representative of the security service, some 2,191 cases of suicide were recorded throughout the country, including 335 completed suicides and 1,856 suicide attempts [13] (Zineb, 2012). According to the same sources, the majority of the cases dealt with were registered in the wilayas of Bejaïa, Tizi-Ouzou, Bouira, Tlemcen, Oran, Skikda, Algiers and Mila.

In the wilaya of Oran, according to a study carried out by the emergency department of CHUO, states that between 2001 and 2005, 1,832 suicide attempts were recorded, increasing from 295 in 2001, to 400 in 2002, and 508 in 2003 and 629 in 2005[14] (fethi, 2012). The numbers are still underestimated according to reality.

Table N° 01

Summary table of the number of suicides and attempted suicides in Algeria between 1993 and 2012, according to several organizations (CHU, PC, GN, DGNR).

Year	Suicide	Suicide Attempt
1993- 2000	1994	1071
2001- 2007	2140	1881
2008- 2010	851	817
2011- 2012	674	2356
Total	5659	6125

Source : (Djebar, 2015.P. 44)

Thus, we carried out this study with the aim firstly to describe the epidemiological and clinical characteristics of suicide attempt in patients seen in the medical-surgical

emergency department and or hospitalized in the services of the EPH Mohamed BOUDIAF Ouargla for 01 year, and secondly to identify the factors that may be at risk and to describe the preventive measures.

4- MATERIALS AND METHODS

4-1- Type of study:

This is a prospective and unicentric descriptive study on a sample of 44 patients seen in the medical-surgical emergency department of the EPH Mohamed BOUDIAF Ouargla or hospitalized after a suicide attempt included according to the WHO definition, over a period of 12 months from May 2020 to April 2021.

-Sociodemographic, clinical, evolutionary and therapeutic characteristics were collected using a pre-established questionnaire.

- Statistical analysis: after processing and analysis of the data entered on MS Excel and controlled by SPSS software.

- Ethical aspects: patients were included in this study after: having received clear, fair and appropriate information about the different objectives of this study and given their consent or that of their loved one. The confidentiality of the data has been guaranteed; The names of the patients do not appear on any document relating to the results of this study.

5- RESULTS

44 cases of suicide attempts, bringing together all types of HCWs received at EPH Mohamed BOUDIAF between 05-2020 and 04-2021.

5-1- Socio-demographic characteristics:

Table N° 02

Socio-demographic characteristics

		Frequence	Percentage
Sex	Male	18	41%
	Female	26	59%
Age	10 _15	5	11%
	16 _21	14	32%
	22 _27	12	27%
	28 _33	8	18%
	≥ 34	5	11%
Social origine	Rural	5	10%
	Urban	39	90%
Instruction level	Primary	3	7%
	Middle	19	43%
	Secondary	15	34%
	University	7	16%
Marital Status	Bachelor	27	61%
	Married	11	25%
	Divorced	4	9%
	Widower	2	5%
Work activity	Yes	10	23%
	No	34	77%



5-2- Distribution of patients by historical background:

5-2-1- Distribution of patients according to history of organic condition:

18% of suicidal people have a particular organic condition (i.e. hypertension, diabetes, epilepsy, motor disability, etc.).

5-2-2- Distribution of patients according to ATCDS of psycho-psychiatric condition:

We find that 27% of suicidal people have a particular psycho-psychiatric condition, compared to 73% who do not.

5-2-3 Distribution of patients according to exposure to other suicides in the environment:

63% of suicidal people have exposure to other suicides made by friends while 27% and 10% of suicides made by their families of the 2nd and 1st degree respectively.

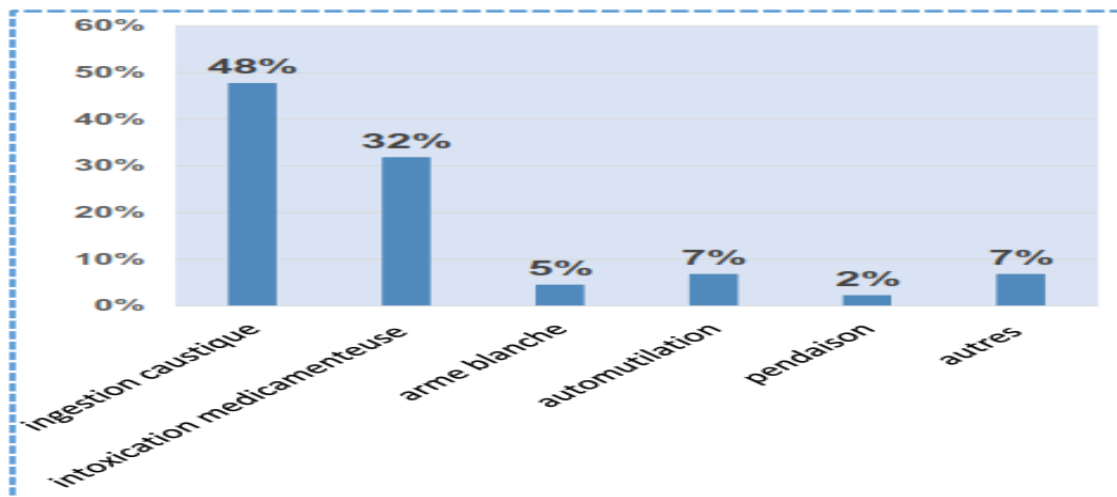
5-2-4- Distribution of patients according to toxic habits:

The majority of our patients are smokers at 32%, followed by the consumption of psychotropic drugs at 23% and other toxic habits (cannabis, alcohol, snorting) at 16%.

5-3- Circumstance of Attempted Suicide:

5-3-1- Distribution of patients according to the type of Suicide Attempt:

We find that the majority of HCWs are by ingestion of caustics at 48%, followed by drug intoxication (32%) and other means (hanging, self-harm, stabbing) at 21%.

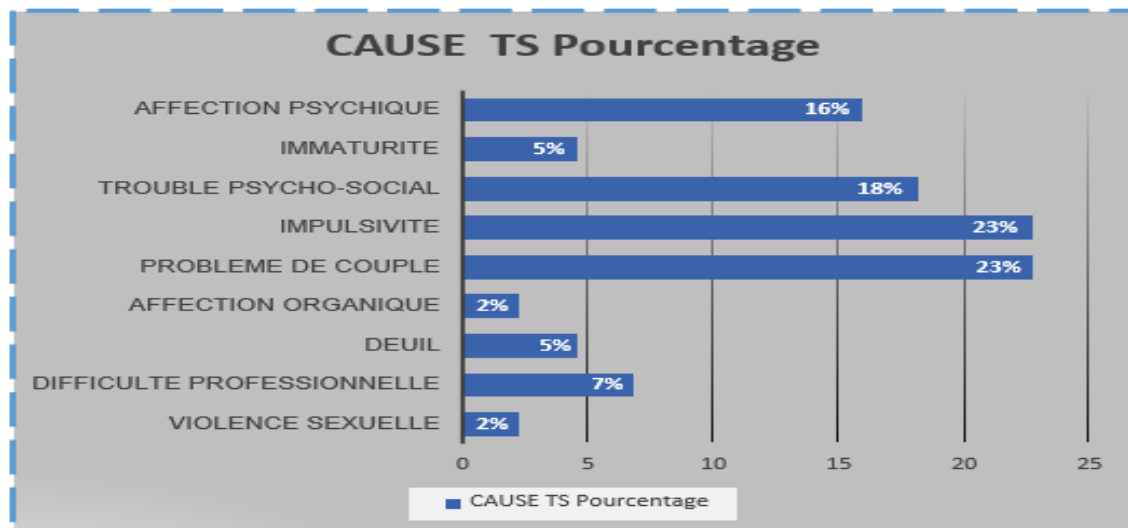


5-3-2- Distribution of patients according to the number of Suicide Attempts:

59% of suicidal patients do TS for the 1st time, 27% for the 2nd time and 14% of patients three or more times.

5-3-3- Distribution of patients according to the cause of Suicide Attempt:

23% of TS are due to impulsivity and couple problems, 18% are related to psycho-social disorder. Occupational difficulty, bereavement, organic affection and sexual violence are directly related to the occurrence of TS in 7%, 5%, 2% and 2% respectively.



5-4- Context of Suicide Attempt:

5-4-1- Distribution of patients according to the presence of persistent suicidal ideation:

64% of suicidal people have persistent suicidal ideation, compared to 36% who do not.

5-4-2- Distribution of patients according to regret for suicidal gesture:

It can be seen that 66% of suicidal people regret their suicidal gesture compared to 34% who do not regret it.

6- Discussion

We will try to discuss the different factors involved in the suicidal process based on the different parameters sought in our investigation during one year, we collected 44 cases of TS.

6-1- Socio-demographic factors

6-1-1- Gender:

In our study, there is a female predominance at 59%, close to the results of studies of: Tlemcen with female predominance at 64%, to a multicentred study out of 3206 that found 67%, in a French study of 2011, they are more common in women (289 per 100,000) than in men (234 per 100,000), and also in Morocco with a sex ratio of 2.41 in favour of women. [15] (Amiar.l S. , 2019)

According to a study conducted in metropolitan France; there are more TS of women compared to men (3♀/2♂), and more mortality of men compared to women (4♂/3♀). [16] (Monmousseau.F, 2021)

On the other hand, the male sex was the most represented (51.3%) in the Bamako study [17] (Almoustapha.O, 2021). This result is comparable to that of a study carried out in Tunisia which found a male predominance with a sex ratio (M/F) of 0.56. [18] (Charfi.F, 2021)

Despite the female predominance in our study; The male sex also has percentages that are not negligible at 41%. This result may seem paradoxical in view of deaths by suicide, which are much more male. This peculiarity is partly due to the means used, which are very different depending on the gender, and which are more lethal among men (hanging, firearms, etc.).

6-1-2- Age:

Age extremes between 10 and 58 years, the average age of our entire sample is 17 years. The modal class corresponds to the 2nd age group: 16-21 years old (32%).

There is an agreement between our study and the Tlemcen study where the 15-24 age group represents 40%. In Bamako, the 20-40 age group was the most represented (46.9%), the average age of patients was 29.31 ± 11.78 years with extremes of 14 and 62 years. In Morocco in 2011, the average age was 24.39 ± 8 years [19] (Amiar.l S. , 2019).

In the literature: suicide attempts were most frequent between the ages of 15 and 35 and then decreased. Studies conducted in the general population in the United States estimate the lifetime prevalence of HCWs at 4.6% among 15–54-year-olds (NCS study, Kessler, 1999). Choquet et al, found that 7% of young people, between 11 and 19 years old, report having had a TS. Fergusson et al found that 12% of a cohort of adolescents had suicidal ideation before the age of 16 and 3% of them had TS. A recent review of the international literature of 128 studies involving 513,188 adolescents found a rate of 9.7% of TS at any point in their lives, and 29.9% of suicidal ideation.

The ST was the prerogative of young people and adolescents in particular. These results can be explained by impulsivity, immaturity and taking the toxicant.

6-1-3- Educational Attainment:

The majority of our patients have an average level of education at 43%, primary education at 7% and university education at 16%. These results are similar to those found in the Oran study, where the average level was 42% and university at 4%, in the Bamako study, where the out-of-school population represented 46%, and in the Tlemcen study, 64% were out of school or had a primary education. The Inserm national survey carried out in 1993 showed a TS rate of 15% among those not in school. The New Zealand study of Beutrais found a low level of education [OR = 7.5].

6-1-4- Marital status:

Single people were the most affected category at 61%. This result is in line with that found in the study of Tlemcen at 61% and Oran at 86%. In contrast, in the Bamako study, 57.5% of the patients were married. In the literature, male sex, married status, and low educational attainment are the main demographic risk factors identified [20] (Beck F, 2010).

6-1-5- Work activity:

The majority of our patients are 77% unemployed. This result is similar to that found in the Tlemcen study, 60% of suicidal people were inactive. A New Zealand study by Beautrais et al, showed that youth at high risk of suicide have a higher unemployment rate [OR = 2.3], and a rate of 30% of suicidal people are unemployed is found in a 12-month longitudinal study.

6-2- Medical-surgical and toxic personal history:

6-2-1- History of organic disease:

Organic diseases (cancer, diabetes, hypertensiveness, motor disability, etc.) are present in 18% of suicidal people. The study by Tahinarijaona Ramarozatovo [21] (Eddy T. R., 2019) found 8.30% of patients who had chronic diseases. The role of medical factors, such as chronic diseases, on suicide is poorly studied.

However, the National Suicide Observatory in France in its 2nd report found that diseases such as epilepsy or cancer, can be significantly associated with an increased risk of suicidal behaviour or death by suicide [22] (Observatoire nationale du suicide, 2016).

It is indeed a risk factor for suicide, the importance of which varies according to the degree of severity of the disease according to the literature.

6-2-2- History of psycho-psychiatric condition:

It should be remembered that most studies agree that more than 90% of subjects with suicidal behaviour's suffered from a psycho-psychiatric disorder such as the Tlemcen study.

In our series, and contrary to what is found in other studies, psycho-psychiatric disorders are present in only 27%. 23% of HCWs are impulsive without prior premeditation of the act, 23% are due to couple problems, 18% to psycho-social disorder, 16% to psychological illness. The other causes are represented respectively by: professional difficulty (7%), bereavement and immaturity (5% each), sexual violence and organic affection (2% each).

Thus Ranaivoson [21] (Ranaivoson.v, 2012) found marital conflicts as the first stressor responsible for TS with 40.14%, followed by family conflicts with 22.11%. Similarly, Raobelle [23] (H, et al., 2011) found marital conflicts at 35% as the main stress factors, followed by family conflicts at 33.3%.

In the literature, Bourgeois [24] (Bourgeois M.-L. , 2007) demonstrates that suicide is always linked to a specific event or circumstance in the life of the individual in the days or weeks preceding the act.

6-2-3- Toxic habits:

In our study, 45% of patients resort to toxic habits, tobacco as a first-line treatment at 32%, followed by psychotropic drugs at 23%.

In a cohort study of 148 suicidal patients in Geneva, the rate was around 11%. Abbar et al, collected 150 suicidal people with 28% having addictive disorders of which 24.7% are alcoholics and 8.7% are drug addicts.

The data we found are not weak enough, as in the study of TS in Tlemcen where the rates of alcoholism or addiction disorders were really low at 2% and the study of Tahinarijaona Ramarozatovo [25] (eddy, 2019) found 7.63% of suicidal people with addictive problems (smoking, alcoholism and cannabis).

On the other hand, data from the literature, Voss et al [26] (W. D. Voss, 2013) have proven the importance of toxic habits in the induction of suicidal processes. Alcoholics die by suicide six times more than the general population. 30-40% of HCWs are immediately related to alcohol consumption.

6-3- Circumstances and modalities of taking action:

6-3-1- History of exposure to other HCWs in the environment:

Researchers find that the presence of HCW in the environment is a major risk factor for suicide. In our study, there is a real agreement with this notion with 63% of TS made by friends; 27% made by a family member of the 2nd degree and 10% of the 1st degree.

According to the study by Tahinarijaona Ramarozatovo [27] (Eddy T. , étude épidémiologique des suicides et tentatives de suicide à ANTANANARIVO de 2014 A 2017, 2019), only 1.82% of suicidal people had a family history of suicidal behaviour. Brent et al [28] (Brant.D, 2002) showed that children born to suicidal parents committed suicide more than children born to parents with no history.

Survivors should, depending on their needs, have access to short- and long-term support. The family of the suicide victim should receive emergency psychological support when they are informed of the suicide.

6-3-2- The means used:

48% of the HCWs in our study are caused by ingestion of caustics, including 66% women and 34% men, 71% between 16 and 27 years of age, i.e. adolescents and young people. In 52% of cases, other means of HCW are used.

In the study by Oran Djaoui [29] (Djaoui.B, 2012), 57% of patients resort to drug ingestion as the first means of suicidality, including 37% of women and 20% of men. The

2nd method is in 33% of cases, the use of the ingestion of caustic products used by 23% of women and 10% of men.

Ranaivoson [30] (Ranaivoson.V, 2012), found that the majority of his suicides had used drug substances at 60.59%. On the other hand, studies carried out in France [31] (suicide, *Etat des lieux des connaissances et perspectives de recherche*, 2014), [32] (suicide, 2018) had found hanging as the most frequent mode and method most used by men.

Caustic ingestion is the most frequently used method in HCWs in our study because it is an accessible method, particularly for women, and is more dangerous. The caustic that one administers to oneself would become the means of fortune and proximity to one's home to escape a situation where relational tensions are often reported.

6-3-3- The Number of Suicide Attempts:

In our sample, 59% of patients are first-time HCWs, and 41% have already performed one or more previous TSs. Therefore, a non-negligible rate of recidivism.

According to Tahinarijaona Ramarozatovo's study [33] (Edy, 2019), the majority of suicidal patients are first-time TS, and 9.60% of patients who have already performed one or more previous TS, which may mean that these patients have not been followed.

A history of HCW is a risk factor for future HCW and also increases the risk of fatal suicide.

6-3-4- Background of Suicide Attempt:

In our study, suicidal ideation persists after TS in 64% of suicidal people, the rate is really high and may be related to the presence of the predisposing cause or risk factor.

On the other hand, regret after the suicidal gesture presents itself at 66%, the subjectivity of this type of response does not allow us to obtain fairly reliable results.

According to Tahinarijaona Ramarozatovo's study [34] (Eddy T., 2019), 70.93% (427) carried out their acts, the final purpose of which has not been identified, 27.57% (166) of the suicidal had a real wish for death, 0.99% (06) committed suicide in order to blackmail their close circle, 0.33% (02) committed suicide by external influence, thus driven to suicide, 0.16% (01) committed suicide to try what a suicide is. Our results differ completely from the Ranaivoson study [35], which could be explained by the trivialization of suicide by the general population.

7- Conclusion

Suicide and suicide attempts are considered a public health problem on a global scale because of their frequency, their complications recorded in their evolution and their heavy health expenditure for the state.

This motivated our interest in the issue and prompted the realization of this work, consisting of a cross-sectional descriptive study of a population of 44 suicidal patients, seen or hospitalized at the EPH Mohamed Boudiaf Ouargla, for one year.

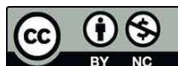
In this study, a female predominance of 59% with sex ratio = 0.69. The average age of our suicidal was 17 years with extremes of 10 and 52 years. The 16-21 age group was the most represented (32%). The majority of suicidal people have a low level of education (average at 43%), 77% are unemployed and 61% are single. The majority of suicidal people resided in an urban area, 18% have a history of a particular organic condition, and 27% have a history of a particular psycho-psychiatric condition. 45% of suicidal people have toxic habits (32% tobacco, 23% psychotropic drugs). 68% of patients have exposure to other suicide in the environment, ingestion of caustic was the most used means of autolysis at 30% followed by drug intoxication at 32%. Impulsivity and relationship problems are the most common causes of acting out, at 28% for each. 59% of suicidal people do TS for the 1st time and 41% do ≥ 2 times. 64% of suicidal people have persistent suicidal ideation and 66% of patients regret their suicidal gesture.

The results found in our study would be considered as tools for the prevention of the occurrence of TS through early detection and adequate management of predisposing subjects; all the while knowing that the passage to action remains unpredictable.

Given the epidemiological importance of the frequency of HCWs and the extent of its psychological and organic complications in patients and their families, special attention must be paid by psychiatrists and general practitioners to prevent the act and adapt management in order to prevent progressive complications according to regularly updated behaviours.

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